DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-017483
Date Inspected: 19-Oct-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 1000
OSM Departure Time: 1830
Location: Job Site

CWI Name: See Below

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girders

Summary of Items Observed:

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Field Splice E6/E7
B). Field Splice W7/W8
C). Field Splice W6/W7

A). Field Splice E6/E7

The QAI observed the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 6E-7E-D1 and D2. The welding was performed by welding personnel Jeremy Dolman ID-5042 utilizing the WPS ABF-D15-3110-4 Rev. 0. The WPS was also used by the QC inspector Mike Johnson as a reference to monitor welding and verify the Direct Current Electrode Positive (DCEP) welding parameters which noted and recorded by the QC inspector as follows: 250 amps, 23.4 volts and a travel speed measured as 189 mm per minute. The welding was performed in overhead (4G) at approximate with the work in an approximate horizontal plane with weld metal deposited from the underneath side. The QC inspector also verified the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. Later during the shift the QAI observed, at random intervals, the QC inspector monitoring the in process welding, the surface temperatures and verifying the DCEP welding parameters.

B). Field Splice W7/W8

The QAI observed the Shielded Metal Arc Welding (SMAW) process of the edge plate field splice identified as Weld Number (WN): 7W-8W-B1. The welding was performed by Jin Pei Wang ID-7299 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1110A, Rev. 1. The WPS was also used by the Quality Control (QC) Inspector William Sherwood to verify the Direct Current Electrode Positive (DCEP) welding parameters and to monitor the Complete Joint Penetration (CJP) welding. The QAI observed the QC inspector verifying the welding parameters and were noted as 130 amps. The minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with contract documents. The welding was performed in the vertical (3G) position with the work placed in an approximately vertical plane with the groove approximately vertical.

The QAI also observed the welder James Zhen ID-6001welding the field splice identified as WN: 7W-8W-F1 utilizing the Shielded Metal Arc Welding (SMAW) process. The welding was performed utilizing the WPS identified as ABF-WPS-D15-1110-A, Rev. 1 which was also used by the QC inspector as a reference. The QAI observed the QC inspector verify the welding parameters which were noted as 130 amps utilizing the 3.2 welding consumable. The minimum preheat temperature of 20 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with the contract documents.

C). Field Splice W6/W7

The QAI observed the Shielded Metal Arc Welding (SMAW) process of the bottom plate field splice identified as Weld Number (WN): 6W-7W-C1. The welding was performed by Song Tao Huang ID-utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-1040A-1. The WPS was also used by the Quality Control (QC) Inspector William Sherwood to verify the Direct Current Electrode Positive (DCEP) welding parameters and to monitor the Complete Joint Penetration (CJP) welding. The QAI observed the QC inspector verifying the welding parameters and were noted as 145 amps. The minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius appeared to comply with contract documents. The welding was performed in the vertical (3G) position with the work positioned at a 22 degree incline. The welding was performed between the Y dimensions of 0 mm-1000 mm. This area was not welded during the automatic FCAW-G process due the machine configuration would not allow access to the weld joint.

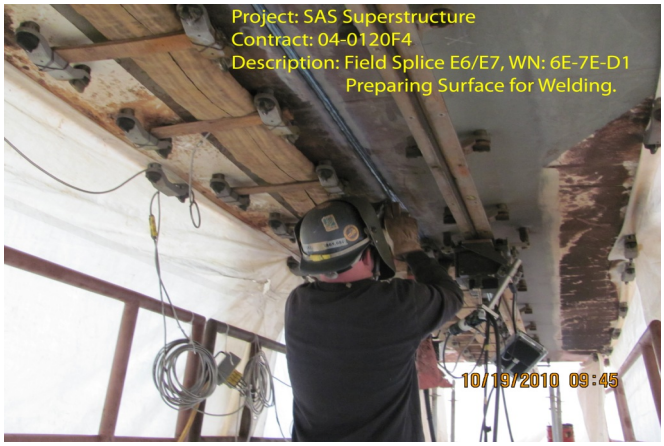
QA Observation and Verification Summary

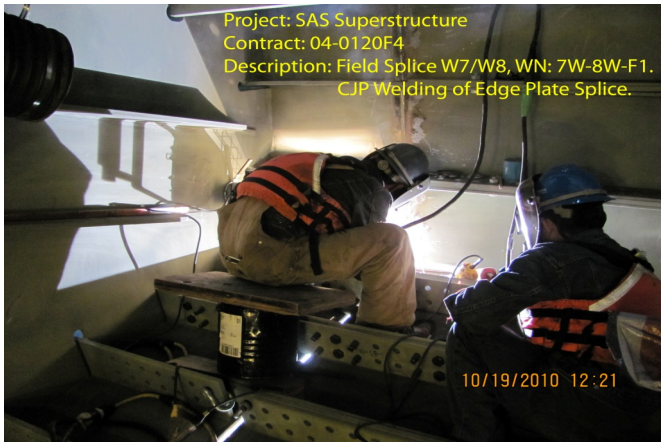
The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW welding process appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

The digital photographs below illustrate the work observed during this scheduled shift.





Summary of Conversations:

There were general conversations with Quality Control Inspector Bonifacio Daquinag, Jr. at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer